8620 Broadband Access Concentrator

Installation Guide

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⚠ Important Safety Instructions

1. Read and follow all warning notices and instructions marked on the product or included in the manual.
2. The AC product version is intended to be used with a 3-wire grounding type plug — a plug which has a grounding pin. This is a safety feature. Equipment grounding is vital to ensure safe operation. Do not defeat the purpose of the grounding type plug by modifying the plug or using an adapter.

   Prior to installation, use an outlet tester or a voltmeter to check the AC receptacle for the presence of earth ground. If the receptacle is not properly grounded, the installation must not continue until a qualified electrician has corrected the problem.

   If a 3-wire grounding type power source is not available, consult a qualified electrician to determine another method of grounding the equipment.
3. Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.
4. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.
5. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous high voltage points or other risks. Refer all servicing to qualified service personnel.
6. General purpose cables are provided with this product. Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the customer. To reduce the risk of fire, use a UL Listed or CSA Certified, minimum No. 26 AWG telecommunication cable.
7. When installed in the final configuration, the product must comply with the applicable Safety Standards and regulatory requirements of the country in which it is installed. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.
8. A rare phenomenon can create a voltage potential between the earth grounds of two or more buildings. If products installed in separate buildings are **interconnected**, the voltage potential may cause a hazardous condition. Consult a qualified electrical consultant to determine whether or not this phenomenon exists and, if necessary, implement corrective action prior to interconnecting the products.
9. Input power to the DC configuration of this product must be obtained from a SELV (Safety Extra Low Voltage) source (less than 60 VDC, and double insulate from hazardous voltages).
10. If it becomes necessary to replace either of the accessible A or B fuses (located on the front panel): For continued protection against fire and/or shock, replace the fuse with the same rating, manufacturer, and manufacturer's part number as originally installed in the unit. These fuses are readily available through your local Paradyne distributor, or you may order replacement fuses by contacting Paradyne directly.
11. When powered by –48 VDC, this product may only be used in a Restricted Access Location in accordance with articles 110-16, 110-16, 110-17, and 110-18 of the National Electric Code, ANSI/NFPA 70. A Restricted Access Location is a secure area (dedicated equipment rooms, equipment closets, or the like) for equipment where access can only be gained by service personnel or by users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that must be taken. In addition, access into this designated secured area is possible only through the use of a tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.
    - — **For DC operation:** Connect the 48 VDC SELV supply source that is electrically isolated from the AC source. The 48 VDC source is to be reliably connected to earth. Connect the earthing (grounding) lug terminal located on the back of the 8620 BAC chassis.
    - — **For DC operation:** A readily accessible disconnect device as part of the building installation shall be incorporated in fixed wiring. The disconnect device (a 48 VDC 15–20A circuit breaker or switch) must be included with a 15–20A, 48 VDC fuse or circuit breaker in the ungrounded connector. Use a minimum 14–18 AWG or 2.5 mm^2 fixed power source wires with strain retention.

12. In addition, if the equipment is to be used with telecommunications circuits, take the following precautions:
    - — Never install telephone wiring during a lightning storm.
    - — Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
    - — Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
    - — Use caution when installing or modifying telephone lines.
    - — Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
    - — Do not use the telephone to report a gas leak in the vicinity of the leak.

⚠ UNITED STATES – EMI NOTICE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The authority to operate this equipment is conditioned by the requirements that no modifications will be made to the equipment unless the changes or modifications are expressly approved by Paradyne Corporation.

⚠ CANADA – EMI NOTICE:

This Class A digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du règlement sur le matériel brouilleur du Canada.

Notice to Users of the Canadian Telephone Network

The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION:

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

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Japan

Class A ITE

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This is a Class A product based on the standard of the Voluntary Control Council for interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

Contents

About This Guide

- Document Purpose and Intended Audience iii
- Document Summary iii
- Product-Related Documents iv

1 Introduction

- The 8620 Broadband Access Concentrator 1-1
  - 8620 BAC Management, Aggregation, and Line Cards. 1-2
- 8620 BAC Features 1-4
  - 8620 BAC Components 1-5

2 Installation

- Preinstallation Considerations 2-1
- Unpacking the Hardware 2-3
- Package Contents 2-3
- Mounting Configurations 2-4
- 8620 BAC Installation. 2-5
  - Placing the 8620 Chassis on a Desktop or Table 2-5
  - Rack Mounting the 8620 BAC 2-6
  - Attaching the Mounting Brackets 2-6
  - Installing the 8620 Chassis in a Rack 2-7
- Complying with NEBS 2-8
  - Connection to the CO Ground Lug 2-8
  - ESD Wrist Strap Jack 2-8
- Connecting Power 2-9
  - Using a Single DC Power Source 2-10
  - Using Two DC Power Sources for Power Redundancy. 2-11
  - Using Only AC Power Source 2-12
  - Using AC Power with DC Power Backup. 2-13
- Installing the Cards 2-14
- Verifying the Installation 2-16

3 Cabling

- Making Cable Connections 3-1
- Installing Network Tip and Ring Connections 3-2
  - Connecting a Line Card Using Cable Ties. 3-3
  - Connecting a Line Card Using Locking Pivot Brackets 3-4
- Connecting an SCP Card to a Terminal or PC 3-5
- Connecting an SCP Card to an SNMP Management System 3-6
- Connecting an MCP Card to a Terminal or PC 3-6
- Connecting to a Modem for Remote Management (with MCP) 3-7
- Connecting an MCP to an SNMP Management System 3-8
- Connecting CO Alarm to the Alarm System. 3-9

4 Troubleshooting

- Troubleshooting Table 4-1
- LEDs 4-3

A Pinouts

- 8-Pin Modular Connector for Alarm Relay Interface A-1
- 8-Pin Modular LAN MCP/LAN SCM Slot Connector A-2
- 8-Pin Modular Serial SCM Connector A-2
- 8-Pin Modular Serial MCP Connector A-3
- DB25 Adapter Pinouts A-4
- DB9 Adapter Pinouts A-4
- Telco 50-Pin Connector Pinouts for DSL Loops and POTS Splitters. . A-5

B Technical Specifications

Index

About This Guide

Document Purpose and Intended Audience

This guide is written for administrators and technicians who install devices at the central office (CO) or at a Network Service Provider (NSP) location adjacent to the CO. It should be used in conjunction with the appropriate management card and line card documentation.

To install the customer premises portion of the 8620 Broadband Access Concentrator (BAC), refer to the appropriate Remote Termination Unit (RTU) customer premises installation instructions and POTS splitter customer premises installation instructions.

Document Summary

Section	Description
Chapter 1, *Introduction*	Provides general information about what types of cards can be used in the 8620 BAC, and describe features of the BAC.
Chapter 2, *Installation*	Describes what is supplied with the 8620 BAC, how to install it, and how to install cards into the chassis.
Chapter 3, *Cabling*	Describes how to install various cables used by the 8620 BAC and its cards.
Chapter 4, *Troubleshooting*	Lists suggested solutions to possible problems and describes the LEDs.
Appendix A, Pinouts	Provides pinouts for the BAC connectors as well as for connectors on cards that can be used in the BAC.
Appendix B, *Technical Specifications*	Lists Technical Specifications for the 8620 BAC.
Glossary	Defines terms and acronyms used in this document.
Index	Lists key terms, concepts, and sections in alphabetical order.

A master glossary of terms and acronyms used in Paradyne documents is available online at **www.paradyne.com**. Select *Support* → *Technical Manuals* → *Technical Glossary*.

Product-Related Documents

Complete documentation for this product is available online at **www.paradyne.com**. Select *Support* → *Technical Manuals*.

Document Number	Document Title
6050-A2-GZ40	*Hotwire Central Office Universal POTS Splitter, Models 6050 and 7020, Installation Instructions*
8000-A2-GB22	*Hotwire Management Communications (MCC) Card, IP Conservative, User's Guide*
8000-A2-GB26	*Hotwire MVL, ReachDSL, RADSL, IDSL, and SDSL Cards, Models 8310, 8312/8314, 8510/8373/8374, 8323/8324, and 8343/8344, User's Guide*
8000-A2-GZ40	*Hotwire MCC Card, IP Conservative, Installation Instructions*
8021-A2-GB20	*Shelf Concentration Module (SCM) Card User's Guide*
8021-A2-GZ40	*Hotwire Shelf Concentration Module (SCM) Card Installation Instructions*
8303-A2-GZ40	*Hotwire 8303/8304 IDSL Cards Installation Instructions*
8312-A2-GZ40	*Hotwire 8312/8314 MVL and ReachDSL/MVL Cards Installation Instructions*
8335-A2-GB20	*Hotwire ATM Line Cards, Models 8335, 8355, 8365, and 8385, User's Guide*
8335-A2-GZ40	*Hotwire ATM Line Cards, Models 8335, 8355, 8365, and 8385, Installation Instructions*
8343-A2-GZ40	*Hotwire 8343/8344 Packet SDSL Cards Installation Instructions*
8373-A2-GZ40	*Hotwire 8373/8374 RADSL Cards Installation Instructions*
8400-A2-GB20	*Shelf Concentration and Processing (SCP) Card with ATM Uplink User's Guide*
8400-A2-GB21	*Shelf Concentration and Processing (SCP) Card with IP Uplink User's Guide*
8400-A2-GZ40	*Shelf Concentration and Processing (SCP) Card Installation Instructions*
8700-A2-GB20	*Hotwire TDM SDSL Termination Units, Models 8777 and 8779, User's Guide*
8700-A2-GN10	*Hotwire TDM SDSL Termination Units, Models 8777 and 8779, Installation Instructions*
8700-A2-GN15	*Hotwire TDM SDSL Termination Units, Models 8775 and 8785, Installation Instructions*

Document Number	Document Title
8774-A2-GB20	*Hotwire 8774 TDM SDSL Termination Unit, with DSX-1 Interface, User's Guide*
8774-A2-GZ40	*Hotwire 8774 TDM SDSL Termination Unit, with DSX-1 Interface, Installation Instructions*
8776-A2-GB20	*Hotwire 8776 TDM SDSL Termination Unit, with G.703 Interface, User's Guide*
8776-A2-GZ40	*Hotwire 8776 TDM SDSL Termination Unit, with G.703 Interface, Installation Instructions*
8784-A2-GB20	*Hotwire 8784 TDM SDSL Termination Unit, with DSX-1 Interface, User's Guide*
8784-A2-GZ40	*Hotwire 8784 TDM SDSL Termination Unit, with DSX-1 Interface, Installation Instructions*
8786-A2-GB20	*Hotwire 8786 TDM SDSL Termination Unit, with G.703 Interface, User's Guide*
8786-A2-GZ40	*Hotwire 8786 TDM SDSL Termination Unit, with G.703 Interface, Installation Instructions*
8799-A2-GB20	*Hotwire 8799 TDM SHDSL Line Card, with G.703 Interface, User's Guide*
8799-A2-GZ40	*Hotwire 8799 TDM SHDSL Line Card, with G.703 Interface, Installation Instructions*
8900-A2-GB20	*ATM Line Cards, Models 8955, 8965, and 8985, User's Guide*
8900-A2-GZ40	*ATM Line Cards, Models 8955, 8965, and 8985, Installation Instructions*
8990-A2-GN10	*T1 and E1 IMA Cards, Models 8995 and 8997, Installation and User's Guide*

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Introduction

1

The 8620 Broadband Access Concentrator

The 8620 Broadband Access Concentrator (BAC), which is designed for use in an Internet Service Provider (ISP) or Network Access Provider (NAP) location, is a low-cost alternative to the 8820 BAC. The 8620 BAC can also be placed in a Remote Terminal (RT) adjacent to the Telco's Digital Loop Carrier (DLC) systems. It provides high-speed Internet or intranet access.

The System Interface Module (SIM) is shipped with the chassis, installed in the bottom slot. The SIM provides user interface connections on the front of the BAC.

An Asynchronous Transfer Mode (ATM) backplane provides ATM aggregation across multiple DSL port cards.

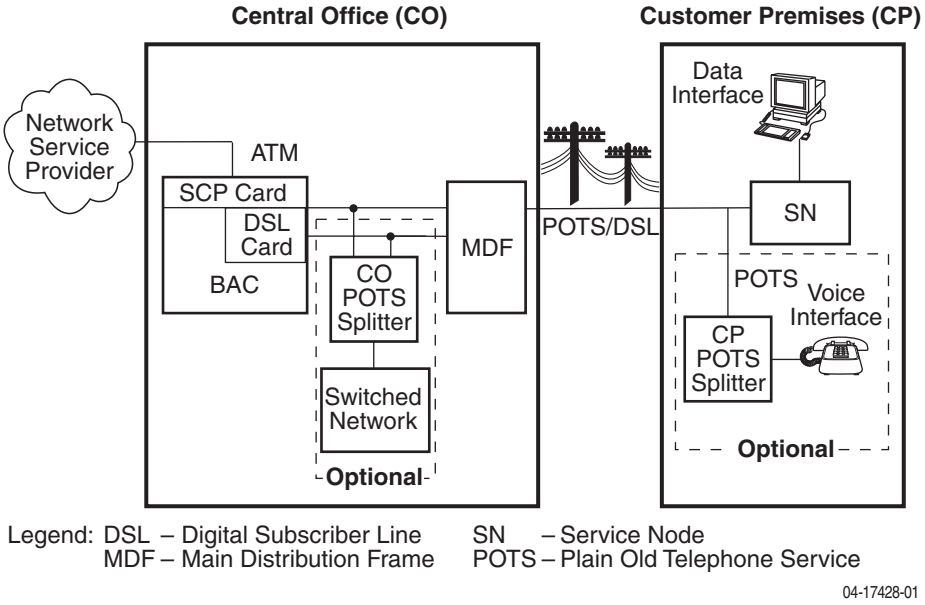
With Release 3.0 of the BAC, there are two configurations:

- **SCP-card-based.** A Shelf Concentration and Processing (SCP) card is installed in Slot A to provide the management and aggregation functions. The chassis supports up to three line cards and 144 ports.

  The SCP card supports Models 8955, 8965, 8968, and 8985 ATM line cards, the Model 8995 T1 IMA card, and the Model 8997 E1 IMA card. With an MCP installed, legacy packet cards (Model 8312) and TDM cards (Models 8775, 8777, 8779, and 8799) are also supported.

- **SCM-based.** A Management Control Processor (MCP) card is installed in Slot 1 for management of the line cards. A Shelf Concentration Module (SCM), installed in Slot A, provides aggregation of DSL traffic for the chassis. The chassis supports up to two line cards and 48 ports.

The following illustration shows a high-level view of a typical 8620 BAC configuration.



8620 BAC Management, Aggregation, and Line Cards

The 8620 BAC accepts the following types of cards:

- **SCP card**

  Provides aggregation of DSL traffic on the ATM bus for the chassis, and administers and provides diagnostic connectivity to the line cards. The SCP card acts as a mid-level manager and works in conjunction with an SNMP network management system such as OpenLane® via its LAN port or inband management channel. It gathers operational status for each of the line cards and responds to the SNMP requests. The card also has a serial port for local terminal access. The SCP is designed as a replacement for both the MCP card and the SCM card.

- **MCP card**

  Administers and provides diagnostic connectivity to the line cards. The MCP acts as a mid-level manager and works in conjunction with an SNMP network management system, such as OpenLane®, via its LAN port or inband management channel. It gathers operational status for each of the line cards and responds to the SNMP requests. The card also has a serial port for local terminal access.

- **SCM card**

  Provides aggregation of DSL traffic on the ATM bus for the shelf.

- **Line cards**

  Provide a processor and an Ethernet or ATM interface to the NSP. The processor controls the modems and forwards the packet traffic to and from the Ethernet, ATM and DSL interfaces. Models include:

  — 8303 24-port Integrated Services Digital Network (ISDN) Digital Subscriber Line (IDSL) card that interoperates with the 6301 and 6302 IDSL Routers.

  — 8304 24-port Packet IDSL 2B1Q card with ATM uplink that interoperates with the 6301 and 6302 IDSL Routers.

  — 8312 12-port ReachDSL cards that interoperate with the Hotwire 6310 and 6350 ReachDSL modems.

  — 8314 12-port ReachDSL card that interoperates with the Hotwire 6310 and 6350 ReachDSL modem.

  — 8335 16-port ATM SDSL card.

  — 8343 24-port Packet Symmetric Digital Subscriber Line (Packet SDSL) CAP (Carrierless Amplitude and Phase Modulation) card that interoperates with the 6341 and 6342 SDSL Routers.

  — 8344 24-port Packet SDSL CAP card with ATM uplink that interoperates with the 6341 and 6342 SDSL Routers.

  — 8355 24-port ReachDSL card that interoperates with the Hotwire 6390 ReachDSL modem.

  — 8365 12-port ATM Asymmetric Digital Subscriber Line (ADSL) card.

  — 8373 12-port Rate Adaptive Digital Subscriber Line (RADSL) card that interoperates with the 5620 Remote Termination Unit (RTU) or the 6371 RADSL Router.

  — 8374 12-port RADSL card with ATM uplink that interoperates with the 6371 RADSL Router.

  — 8385 24-port ATM Symmetric High-bit-rate Digital Subscriber Line (SHDSL) card.

  — 8777 and 8779 8-port TDM SDSL cards that interoperate with the Hotwire 7974, 7975, and 7976 TDM SDSL Standalone Termination Units.

  — 8799 8-port TDM SHDSL card that interoperates with the Hotwire 7995 and 7996 TDM SHDSL Endpoints.

  — 8955 24-port ReachDSL card that interoperates with the 6390 ReachDSL modem, for use with the SCP card.

  — 8965 24-port and 8968 48-port ATM ADSL cards, for use with the SCP card.

  — 8985 24-port ATM SHDSL card, for use with the SCP card.

  — 8995 8-port T1 IMA card, for use with the SCP card.

  — 8995 8-port E1 IMA card, for use with the SCP card.

RADSL, ReachDSL, IDSL, SDSL, ADSL, and SHDSL cards are generically referred to as line cards in this document.

Table 1-1 shows which line cards can be used with the different SCP card, MCP, and SCM configurations.

Table 1-1. Line Card Interoperability

SCP Card	SCP Card and MCP	SCM and MCP
8955 8965 8968 8985 8995 8997	8312 8775 8777 8779 8799 8955 8965 8968 8985 8995 8997	8303 8304 8312 8314 8335 8343 8344 8355 8365 8373 8374 8385 8777 8779 8799

8620 BAC Features

The 8620 BAC has the following features:

- **AC and DC Powered Models**

  Two versions of the 8620 BAC are available:

  — **AC powered.** The AC version will operate from 100 to 240 volts AC (nominal), 50 to 60 Hz. It can also be connected to a DC source to provide power redundancy.

  — **DC powered.** The DC version requires a source of 48 VDC. When using the DC version, two separate DC sources may be employed to provide power redundancy. If one power source fails, the other source provides all of the power needed by the system. This is done automatically without system disruption.

- **Hot-Swappable Cards**

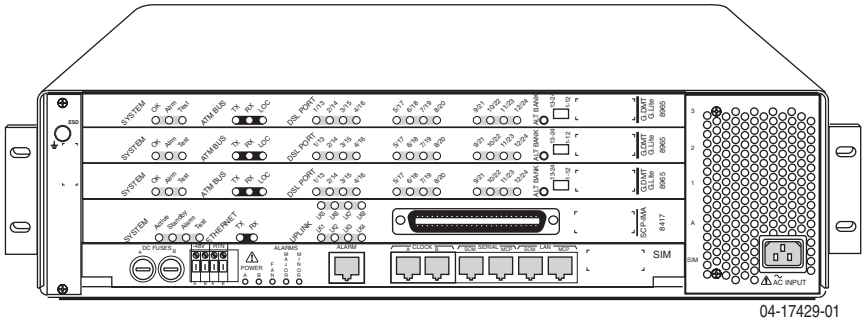
  The MCP and line cards can be installed and removed from the 8620 BAC without service disruption. You can replace these cards without powering down the chassis and disrupting service to the other cards. Removing the SCM or SCP card disrupts traffic on line cards.

- **Primary Network Management Support via SNMP**

  SNMP management of the line cards is accomplished over a single external Ethernet or inband management connection to the MCP card from a Network Management System (NMS) (such as Paradyne's OpenLane). The MCP card gathers all management information for each of the line cards and responds to the SNMP requests on behalf of the cards.

For a list of specific management information bases (MIBs) supported, visit the Paradyne website **www.paradyne.com**. Select *Support* → *Online Support* → *MIBs.*

8620 BAC Components



The 8620 BAC is a 4-slot chassis designed to house one of the following combinations:

- One SCP card and up to three line cards
- One SCP card, one MCP card, and up to two line cards
- One MCP card, one SCM card, and up to two line cards.

Before installing the 8620 BAC, read the *Important Safety Instructions* located at the front of this document.

Installation

2

Preinstallation Considerations

Consider the following before performing installation of the 8620 BAC:

- **Installation Site**

  Your installation site should be well ventilated, clean, and free of environmental extremes.

  — If you are installing the 8620 BAC in a central office (CO) rack, make sure there is a clearance of 2 to 3 feet (0.6 to 1.0 m) at the front of the rack to allow access for the installation of the chassis, circuit cards, and cables.

  — If you intend to use the rear cable connectors, allow for sufficient clearance at the rear of the chassis for cabling.

  — In any installation, leave a clearance of at least 3.5 inches (9 cm) on both sides of the chassis for airflow.

- **Power**

  The AC power version requires a power source of 100–240 VAC (nominal) at 50–60 Hz; maximum current draw is 4 A at 120 VAC.

  The DC power version requires a 48 VDC power source (48 VDC, nominal; maximum current draw is 5 A). The size of power source wires must be between 14 AWG and 18 AWG, and can be either solid or stranded. However, 14 AWG stranded wire is recommended.

- **Grounding**

  A ground lug is located at the lower center of the cover at the rear. It accepts 14 AWG wire.

  A noninsulated banana jack is located on the left front of the unit to provide a ground for an ESD wrist strap.

- **Cabling**

  Use only CAT3 or better twisted-pair network connection cables for DSL Termination Unit connections and interface patch cabling. Untwisted analog cables of any length anywhere in the loop substantially contribute to crosstalk and reduced loop reach.

  The following customer-provided cables and cable adapters are required with this product:

  — Plug-ended Telco 50-pin cable for connection from the 8620 BAC Line ports to the CO POTS splitter shelf or MDF, one cable per DSL card.

  — 8-pin UTP CAT5 modular cable for connection from the 8620 BAC MANAGEMENT MCP port to a 10/100 BaseT hub connector (connected to an SNMP management system network) for Slot 1 in the base chassis. For TDM SDSL and TDM SHDSL cards, refer to the appropriate card Installation Instructions for the correct cable needed.

  — A 14-foot serial cable and DB25 and DB9 adapters are shipped with the MCP card. For connection to a modem, you need a null modem adapter.

  If there is limited work space behind the rack, install any rear-mounted network connectors on the chassis before mounting the chassis in the rack.

CAUTION:

Use of any nontwisted pair wiring arrangements, such as jumpers, can cause a reduction in overall DSL reach performance, even over short distances.

NOTE:

The 8620 BAC weighs 15 to 18 pounds (depending on model) and can be easily installed by one installer.

Unpacking the Hardware

Carefully remove the 8620 chassis from its shipping container and check for physical damage. If the 8620 chassis shows signs of shipping damage, report this immediately to your shipping and sales representatives.

Package Contents

The 8620 BAC, as shipped, consists of the following:

- Four filler plates installed in Slots A, 1, 2, and 3.
- One SIM card installed in bottom slot.
- One AC power cord (if your chassis has the AC power option)
- Two sets of mounting brackets for 19-inch (48.3 cm) and 23-inch (58.4 cm) rack mounting
- Associated hardware bundled in a plastic bag:
  - Set of four rubber feet for desktop mounting
  - Four #10-32 mounting screws for mounting in a rack or cabinet
  - Four #12-24 mounting screws and four #12-24 self-retaining nuts (for use with racks without threaded mounting holes)
  - Four #8-32 Phillips flat-head screws for mounting the 19-inch or 23-inch brackets
  - Four cable ties to attach the Tip and Ring cables to line cards (should locking pivot brackets not be used)
- Additional plastic bag with the following to connect Tip and Ring cables to line cards:
  - Four locking pivot brackets
  - Four #4-40 Phillips pan-head, captive screws (to replace longer captive screws when using the rear-mounted connectors)
- For normal functionality, the 8620 BAC requires:
  - An SCP card, or an MCP card and an SCM card
  - At least one line card

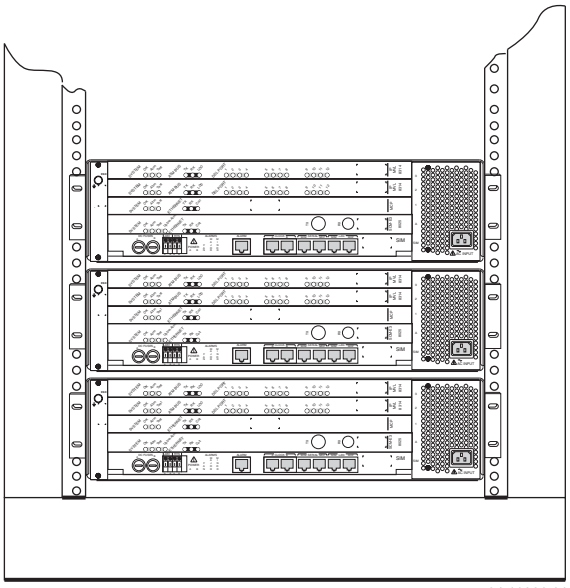
Be sure to register your warranty at **www.paradyne.com/warranty**.

Mounting Configurations

The 8620 BAC can be mounted in any commercial Electronic Industries Association (EIA) standard 19-inch (48.3 cm) or 23-inch (58.4 cm) rack. Both 19- and 23-inch rack-mounting hardware is provided with the unit. Each chassis is 5.22 inches (13.26 cm) high (3U). Allowing 0.03 inches (0.76 mm) between each chassis means that in a typical mounting configuration, up to 14 8620 BACs can be mounted in a 7-foot (2.13-meter) rack. This illustration shows the 8620 BACs installed in a rack. Alternatively, the 8620 BAC can be placed on a desk or table.

NOTE:

In this guide, the term *rack* refers to a CO rack, cabinet, frame, or bay.



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8620 BAC Installation

The 8620 BAC is designed to be placed on a desktop or table, or mounted in a 19-or 23-inch rack (front or center mount). Installable feet are provided for desktop or table installations. Mounting brackets are provided for mounting in 19- or 23-inch racks.

NOTE:

Do not attach the rubber feet to the chassis if you plan to install it in a rack. The rubber feet will cause the chassis to exceed 3U in height, limiting the maximum number of chassis that can be installed in a rack.

You will need a large flat-blade screwdriver and a Phillips screwdriver to install the 8620 chassis.

Placing the 8620 Chassis on a Desktop or Table

▶ Procedure

To install the 8620 chassis on a desktop or table:

1. Make sure that the bottom of the chassis is clean so that rubber feet will stick to its surface.
2. Invert the chassis on a protected surface (to avoid scratching the paint).
3. Remove the protective backing from one of the rubber feet and place it in a corner about 1/2 inch (1.27 cm) from each of the edges of the chassis, pressing down firmly to ensure proper bonding.
4. Repeat Step 3 for each of the remaining three feet.
5. Turn the chassis right side up and place on a flat surface where desired.

Rack Mounting the 8620 BAC

The 8620 BAC is supplied with two sets of mounting brackets, one set for a 19-inch rack and one set for a 23-inch rack. You will only need to install one set of brackets, depending on the type of rack into which you will be installing the 8620 BAC. To mount the 8620 chassis in either a 19-inch or 23-inch rack, you must first attach the proper mounting brackets to the chassis, then install the chassis in the rack. The unused set of brackets can be used as a template to ensure that the correct mounting holes in the rack have been selected.

Attaching the Mounting Brackets

▶ Procedure

To attach mounting brackets to the 8620 chassis for rack mounting:

1. Determine whether you will be front-mounting the chassis or using the 5-inch (12.7 cm) setback.
2. Install the mounting brackets on the 8620 chassis by removing the two front (for front-mounting) or two middle screws (for 5-inch setback) on each side of the unit.
   - — For a 19-inch rack installation, use the mounting brackets with the small flanges supplied for a 19-inch rack.
   - — For a 23-inch rack installation, use the mounting brackets with one small and one large flange supplied for a 23-inch rack.
3. Secure the mounting brackets to the 8620 chassis by using the #8-32 Phillips flat-head screws shipped in a plastic bag with the unit.

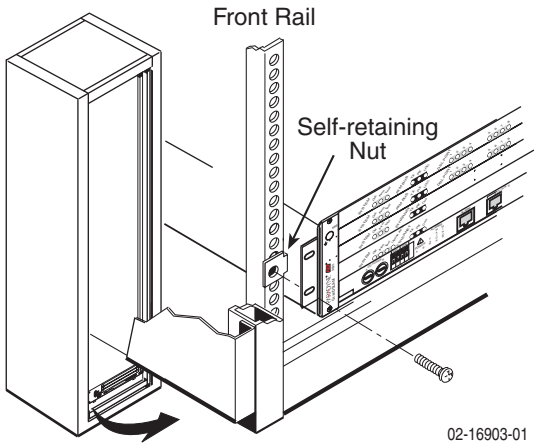
Installing the 8620 Chassis in a Rack

▶ Procedure

To install the 8620 chassis in a rack:

1. Determine the preferred placement of the 8620 chassis in the rack. Then, mark the appropriate locations for the mounting screws in the rack. Use the other set of brackets supplied with the chassis as a template.
2. For racks without threaded screwholes, slip a self-retaining nut onto each rail hole selected and align the hole of the self-retaining nut with the hole in the rail. For racks with threaded screwholes, skip to Step 3.
3. Line up the chassis mounting bracket with the selected holes in the rack and install the screws into the chassis mounting bracket (and the self-retaining nut, if used). Tighten all four screws until the chassis and is securely mounted in the rack.

   The following example shows front-mounting the chassis in a rack without threaded screwholes.



Repeat these steps for each succeeding 8620 chassis.

Complying with NEBS

The following must be taken into consideration for compliance with Network Equipment-Building System (NEBS) requirements.

Connection to the CO Ground Lug

▶ Procedure

To connect to the CO ground lug:

1. Strip back the insulation approximately 1/4- to 3/8-inch (6.5 to 9.5 mm) on the 14 AWG copper ground wire.
2. Loosen the screw on the GND lug located on the rear surface at the center of the bottom edge.
3. Insert the stripped end of the wire into the open end of the GND lug and tighten the lug's screw. Make sure it makes contact with the stripped portion of the wire.

ESD Wrist Strap Jack

A noninsulated banana jack is located at the left front of the 8620 BAC to provide a ground for an ESD wrist strap.

⚠ HANDLING PRECAUTIONS FOR STATIC-SENSITIVE DEVICES

This product is designed to protect sensitive components from damage due to electrostatic discharge (ESD) during normal operation. When performing installation procedures, however, take proper static control precautions to prevent damage to equipment. If you are not sure of the proper static control precautions, contact your nearest sales or service representative.

Connecting Power

The 8620 BAC is available in two versions:

- DC power (48 VDC, nominal; maximum current draw is 5 A)
  - — The DC version has two separate DC inputs, A and B, to provide power redundancy.
- AC power (100–240 V, nominal; 50–60 Hz; maximum current draw is 4 A at 120 VAC)
  - — The AC version can provide power redundancy if a separate 48 VDC source is connected to the B input terminal.

CAUTION:

It is recommended that the following procedures be performed by a qualified electrician.

Using a Single DC Power Source

▶ Procedure

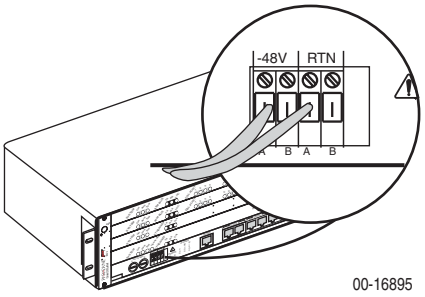
✔ Make sure that the DC power source wires are not powered (that is, the circuit breakers or fuses are open at the source).

✔ The ends of the power source wires (14–18 AWG or 2.5 mm^2 solid or stranded wire) must be stripped of insulation. If the wires are not stripped, strip the tip of each wire (about 1/2 inch or 13 mm in length) before inserting the wire into the appropriate terminal on the –48V input terminal block.

To supply 48 VDC power to the 8620 chassis from a single 48 VDC power source:

1. Insert the following wires into Terminal A and securely fasten each wire by tightening the screw above it. The insulation should be fully within the terminal block and no bare wire should be exposed outside of the block.
2. Clearly label these power source wires as –48V and RTN respectively.

Insert Power Source A's . . .	Into the . . .
Negative side of the power source	–**48V A** input terminal.
Positive side of the power source	**RTN A** (return) terminal.



3. Turn on power to the 8620 BAC.
4. Make sure the PWR A LED on the front panel is ON (green).

Using Two DC Power Sources for Power Redundancy

▶ Procedure

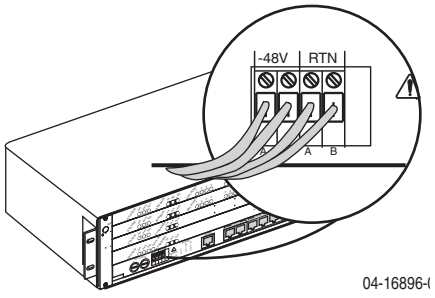
✔ Make sure that the DC power source wires are not powered (that is, the circuit breakers are open).

✔ The ends of the power source wires (14–18 AWG or 2.5 mm^2 solid or stranded wire) must be stripped of insulation to about 1/2 inch (12.7 mm) in length before inserting the wires into the appropriate terminal on the –48V input terminal block.

To supply two DC power sources to the 8620 chassis for power redundancy:

1. Insert the following wires in the appropriate terminal and securely fasten each wire by tightening the screw directly above it. The insulation should be fully within the terminal block and no bare wire should be exposed outside of the block.
2. Clearly label these four power source wires as –48V A, RTN A, –48V B, and RTN B respectively.

Insert Power Source . . .	Into the . . .
Negative side of the first power source (Power Source A)	–**48V A** input terminal.
(Optional) Negative side of the second power source (Power Source B)	–**48V B** input terminal.
Positive side of the first power source (Power Source A)	**RTN A** (return) terminal.
(Optional) Positive side of the second power source (Power Source B)	**RTN B** (return) terminal.



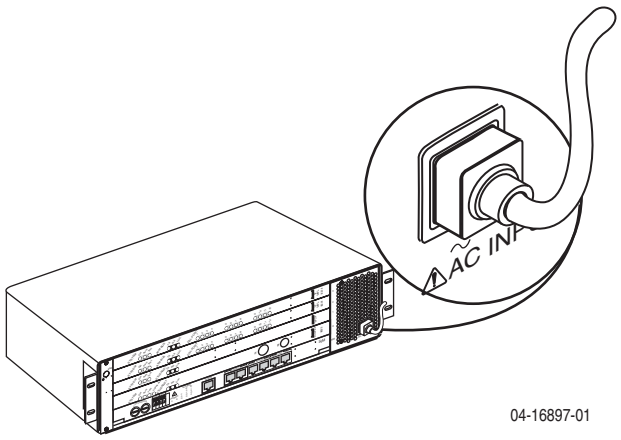
3. Turn on power to the 8620 BAC.
4. Make sure the PWR A and PWR B LEDs on the front panel are both ON (green).

Using Only AC Power Source

▶ Procedure

To supply power to the 8620 chassis using a single AC power source:

1. Plug the AC power cord into the IEC 320 receptacle labeled AC INPUT (~).



2. Plug the other end of the AC power cord into your AC power outlet.

   NOTE:

   The AC power source should be a nonswitched outlet to prevent accidentally turning off power.

3. Make sure the PWR A LED on the front panel is ON (green).

Using AC Power with DC Power Backup

▶ Procedure

✔ Make sure that the DC power source wires are not powered (that is, the circuit breakers are open).

✔ The ends of the DC power source wires (14–18 AWG solid or stranded wire) must be stripped of insulation. If they are not stripped of insulation, strip the tip of each wire (about 1/2 inch or 12.7 mm in length) before plugging the wire into the appropriate connector on the –48V input terminal block. Ensure that each wire is fully inserted into the terminal (until it can go no further).

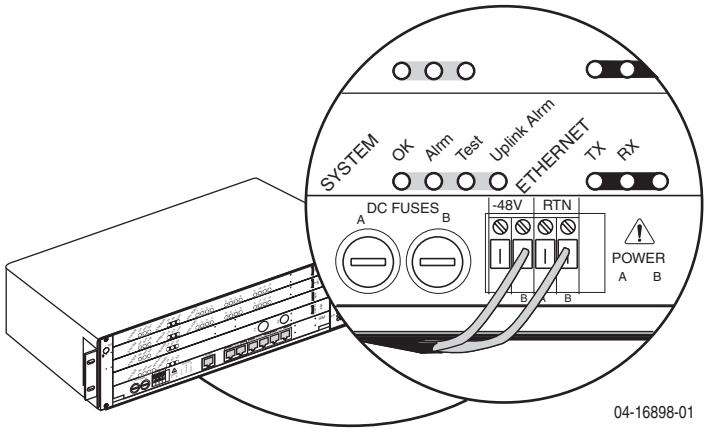
To supply both AC and DC power to the 8620 chassis for power redundancy:

1. Plug the AC power cord into the IEC 320 receptacle labeled AC INPUT (~).
2. Insert the wires for the DC power source into Terminal B and securely fasten each wire by tightening the screw above it. The insulation should be fully within the terminal block and no bare wire should be exposed outside of the block.

   NOTE:

   You should clearly label these power source wires as –48V and RTN respectively.

Insert Power Source B's . . .	Into the . . .
Negative side	–**48V B** input terminal.
Positive side	**RTN B** (return) terminal.



3. Plug the other end of the AC power cord into the AC outlet.
4. Power the DC connections.
5. Make sure the PWR A and PWR B LEDs on the front panel are both ON (green).

Installing the Cards

Use a small- to medium-size Phillips screwdriver to install the SCP, MCP, SCM, and line cards. If used:

- An SCP card must be installed in Slot A. **Do not attempt to insert an SCP card into any slot other than Slot A.**
- An SCM card must be installed in Slot A. **Do not attempt to insert an SCM card into any slot other than Slot A.**
- An MCP card must be installed in Slot 1. **Do not attempt to insert an MCP card into any slot other than Slot 1. Only use the MCP card in an 8620 chassis. Do *not* try to use an MCC or MCC Plus card, as they are designed for a different chassis.**

A DSL port card or MCP card may be replaced without disruption to user data (that is, you can remove and reinstall a card without powering down the 8620 chassis and disrupting user data on the other cards). To remove the port card or the MCP card from the chassis, unfasten the screws on both ends of the faceplate. Then, simply push the ejector handles outward and slide the card out. To remove an SCP or SCM card, unscrew both ends of the card's faceplate, then pull the levers inward and slide the card out.

Removing an SCP or SCM card disrupts data on the DSL port cards.

When swapping a new card for an old card, it is important to note that the 8620 BAC retains the Media Access Control (MAC) address, also referred to as the physical address. This means that the new card will have the same MAC address as the old one. If you need to refer to the MAC address, it is printed on the SIM card. You must remove the SCP or SCM card from the chassis to see the MAC address printed on the SIM card.

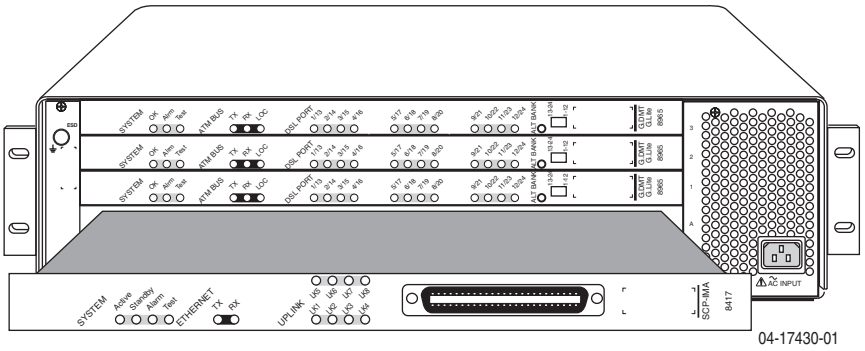
NOTE:

Do not discard filler plates. Each slot in the chassis must contain a circuit card or a filler plate to maintain the required EMI shielding and to prevent air leakage from the forced air cooling. Air leakage could result in overheating which may cause the power to the circuit cards to be shut off. Store all unused filler plates in a safe place. You may need to use the filler plates to cover open slots in the chassis at a later time.

▶ Procedure

To install a circuit card in the 8620 BAC:

1. Remove the filler plate from the slot by unscrewing the mounting screws at each end.
2. Hold the card horizontally with the components on top, and insert it into the left and right card guides of the slot of the base chassis.



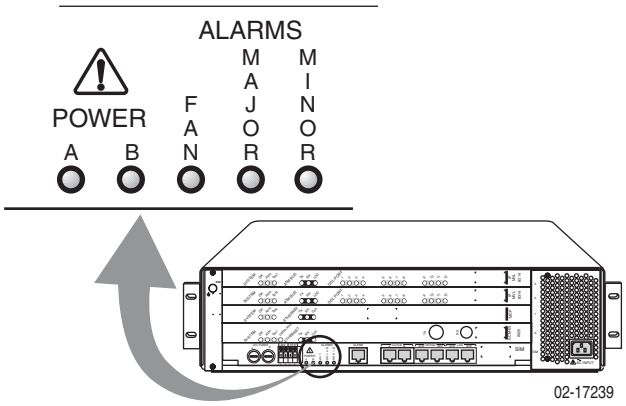
3. Carefully slide the card into the slot until the card meets the connectors on the backplane. Then press in on the insertion/ejection levers until the card is fully seated.
4. For desktop installations, press on the card's front panel with one hand and on the back of the 8620 chassis with the other until the card's connector seats in its mating connector.
5. Make sure the SYSTEM OK indicator (on line cards) or SYSTEM ACTIVE indicator (on the SCP card) is cycling off and on. If not, refer to *Troubleshooting Table* in Chapter 4, *Troubleshooting*.
6. Secure the card by fastening the screws on each end of the faceplate. This is required to maintain proper gasket pressure on the faceplate as well as proper air flow.

NOTE:

For detailed information about the configuration and operation of the circuit card, see the appropriate card User's Guide.

Verifying the Installation

To verify the hardware installation, observe the front panel indicators.



In normal operation:

- The PWR A and/or PWR B LEDs on the front panel must be in the ON state (green):
  - — If you are using a single 48 VDC power source, then only the green PWR A LED will be ON.
  - — If you are using dual 48 VDC power sources, then both the green PWR A and PWR B LEDs will be ON.
  - — If you are using a single AC power source, then the green PWR A LED must be ON.
  - — If you are using both an AC power source and a 48 VDC power source, then both the PWR A and PWR B LEDs must be ON.
- The yellow FAN ALM LED on the front panel must be OFF.
- If you installed an SCP card, verify that the SYSTEM ACTIVE LED is cycling off and on.
- If you installed an MCP card, verify that the SYSTEM OK LED is cycling off and on.
- Verify that the SYSTEM OK LED on any line cards is cycling off and on.

If these LEDs fail to appear as described, see *Troubleshooting Table* and *LEDs* in Chapter 4, *Troubleshooting*, for more information.

Cabling

3

Making Cable Connections

This section provides the instructions you need to make the necessary cable connections to:

- Network (Tip and Ring connections)
- Terminal or Personal Computer (PC)
- Modem for remote management
- SNMP management system Terminal, laptop computer, or modem
- Alarm Relay Interface

For any other type of connection, refer to the appropriate line card Installation Instructions.

Installing Network Tip and Ring Connections

Line cards connect to the network through connectors mounted on the back of the 8620 BAC. Each slot has its own 50-pin connector wired to it and is capable of supporting high-density cards with up to 25 ports.

The network Tip and Ring cables must be equipped with end-fed plug connectors. Each connector has a captive screw at one end and a tapped hole in the plastic at the other end. The connector's captive screw must be replaced with a shorter one supplied with the chassis. You can attach the cable to the chassis using the cable ties provided or you can use the locking pivot brackets provided. See *Connecting a Line Card Using Locking Pivot Brackets* on page 3-4.

⚠ EMI NOTICE:

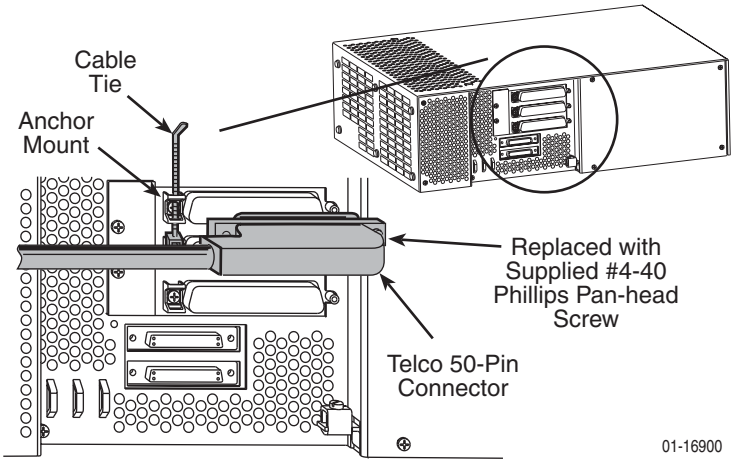
In order to maintain compliance with Part 15, FCC Rules and other EMI requirements, certain line cards require the installation of the supplied ferrite choke on the 50-pin telephone network cable where it connects to the BAC. The choke and its installation instructions are provided with the line cards.

Connecting a Line Card Using Cable Ties

▶ Procedure

To connect a line card in the 8620 chassis using the provided cable ties:

1. On each cable, replace the longer captive screw on the cable connector with the #4-40 Phillips pan-head screw shipped in a plastic bag with the unit. Do not insert the screw past the connector body until Step 4.
2. Plug the Telco 50-pin cable into the appropriate connector for the slot containing the card (labeled 2 or 3, connector 1 is for future use) on the rear of the 8620 chassis.
3. Thread the provided cable tie through the anchor mount on the end of the connector where the cable will lie. Tighten the cable tie around the connector and cut off any excess.
4. Secure the other end of the Telco 50-pin cable by tightening the Phillips pan-head screw (that you replaced in Step 1) on the right side of the connector.
5. Make sure the other end of the cable is connected to the appropriate POTS splitter shelf, MDF, or demarcation point.



NOTE:

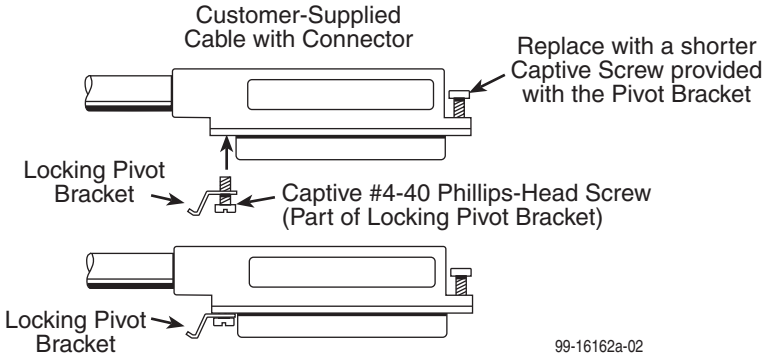
For detailed information about the POTS splitter, refer to the *Hotwire Central Office Universal POTS Splitter, Models 6050 and 7020, Installation Instructions*.

Connecting a Line Card Using Locking Pivot Brackets

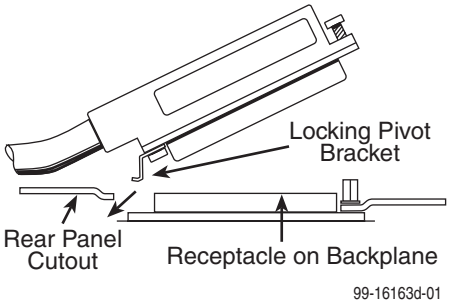
▶ Procedure

To connect a line card in the 8620 chassis using the provided locking pivot brackets:

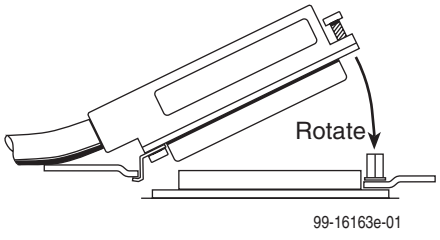
1. For each cable, replace the longer captive screw on the cable connector with the #4-40 Phillips pan-head screw shipped in a plastic bag with the unit. Do not insert the screw past the connector body until Step 6.
2. Install the locking pivot bracket onto the cable end of the connector using the captive screw, as illustrated below.



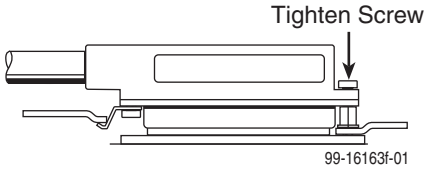
3. Insert the bottom edge of the locking pivot bracket inside the lower edge of the rear panel cutout.



4. Align the two connectors.
5. Rotate the connector until it is fully seated.



6. Tighten the captive screw on the top of the cable's connector to secure it to the insert mounted on the rear cover.



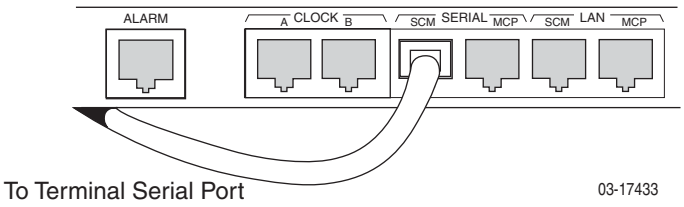
7. Plug the Telco 50-pin cable into the appropriate connector for the slot containing the card (labeled 2 or 3, connector 1 is for future use) on the rear of the 8620 chassis.
8. Make sure the other end of the cable is connected to the appropriate POTS splitter shelf, MDF, or demarcation point.

Connecting an SCP Card to a Terminal or PC

▶ Procedure

To connect an SCP card to a terminal or PC:

1. Plug the end of an 8-pin modular cable into SERIAL SCM connector of the SIM, which corresponds to the SCP card in Slot A of the chassis.
2. Plug the other end of the cable into the serial port connector on your terminal or PC.



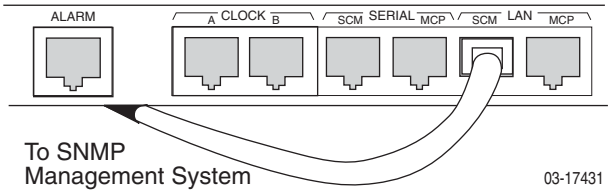
3. Configure your terminal or terminal emulator with the following settings:
   - — Baud Rate = 9600
   - — Data Bits = 8
   - — Parity = No Parity
   - — Stop Bits = 1
   - — Flow Control = None
   - — Terminal Type = VT100

Connecting an SCP Card to an SNMP Management System

▶ Procedure

To connect an SCP card to an SNMP management system or for Telnet access:

1. Plug the end of an 8-pin modular cable into LAN SCM jack of the SIM, which corresponds to the SCP card in Slot A of the chassis.
2. Plug the other end of the cable into the 10/100 BaseT hub connector to the SNMP management system network.

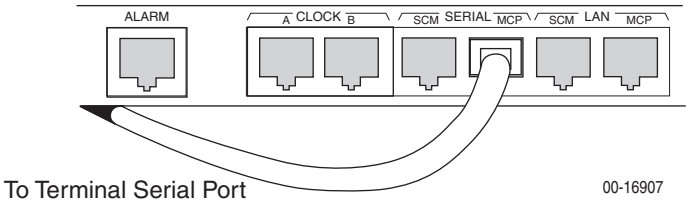


Connecting an MCP Card to a Terminal or PC

▶ Procedure

To connect an MCP card to a terminal or PC:

1. Plug the end of an 8-pin modular cable into SERIAL MCP of the SIM, which corresponds to the MCP card in Slot 1 of the chassis.
2. Plug the other end of the cable into the serial port connector on your terminal or PC.



3. Configure your terminal or terminal emulator with the following settings:
   - — Baud Rate = 9600
   - — Data Bits = 8
   - — Parity = No Parity
   - — Stop Bits = 1
   - — Flow Control = None
   - — Terminal Type = VT100

Connecting to a Modem for Remote Management (with MCP)

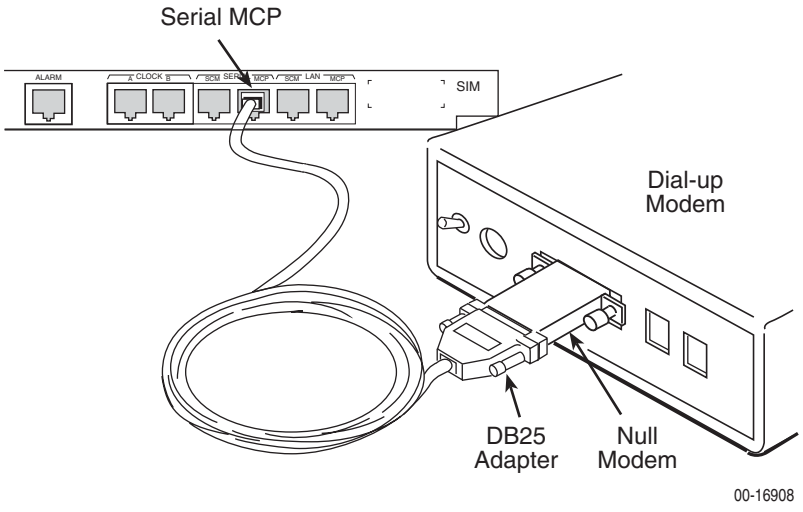
Before connecting the 8620 BAC to a dial-up modem, configure the modem with the following settings:

- Set the modem for auto answer. For example, ATS0=1**.**
- Turn off character echo. For example, ATE0.
- Enable result codes in originate mode only. For example, ATQ2.
- Set the modem to ignore Data Terminal Ready (DTR). For example, AT&D0.

▶ Procedure

To connect the 8620 BAC to a dial-up modem:

1. Connect an 8-pin modular plug-ended serial cable into the SERIAL MCP port of the 8620 BAC.
2. Plug the other end of the cable into your modem's serial port using a DB25 (RS-232 male) adapter, supplied with the MCP card, and a Null Modem adapter.

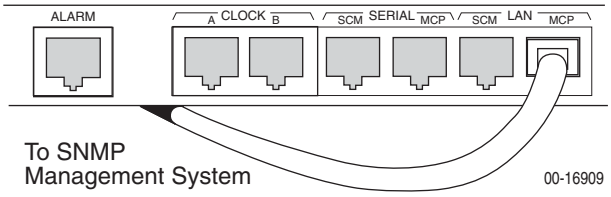


Connecting an MCP to an SNMP Management System

▶ Procedure

To connect an MCP card to an SNMP management system or for Telnet access:

1. Plug the end of an 8-pin modular cable into LAN MCP jack of the SIM, which corresponds to the MCP card in Slot 1 of the chassis.
2. Plug the other end of the cable into the 10/100 BaseT hub connector to the SNMP management system network.



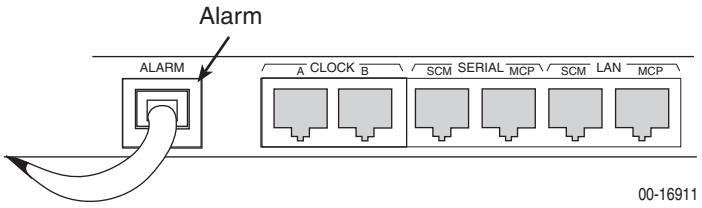
Connecting CO Alarm to the Alarm System

The following procedure is optional. Follow this procedure only if you want to connect to a CO alarm system. See *8-Pin Modular Connector for Alarm Relay Interface* in Appendix A, *Pinouts*, for pinout information.

▶ Procedure

To connect the 8620 BAC to a CO alarm system:

1. Plug the 8-pin modular cable into the ALARM connector on the front of the 8620 chassis.
2. Remove the modular plug connector at the end of the cable, strip the wires and connect to the desired CO alarm system outputs.



Connecting Clock Sources to Clock A and Clock B

The following procedure is optional. Follow this procedure only if you want to use external BITS (Building Integrated Timing Supply) clocking in an SCP-based chassis. See *8-Pin Modular Connectors for Clock A and Clock B* in Appendix A, *Pinouts*, for pinout information. See *Configuration - System Clock* in the SCP card's online Help for information about clocking and clock switching.

▶ Procedure

To connect the 8620 BAC to an external clock:

1. Plug the 8-pin modular cable into the Clock A or Clock B connector on the front of the 8620 chassis. The active SCP card has access to both connectors.
2. Connect the other end of the cable to the BITS clocking source.

Troubleshooting

4

Troubleshooting Table

Table 4-1. Troubleshooting Table (1 of 2)

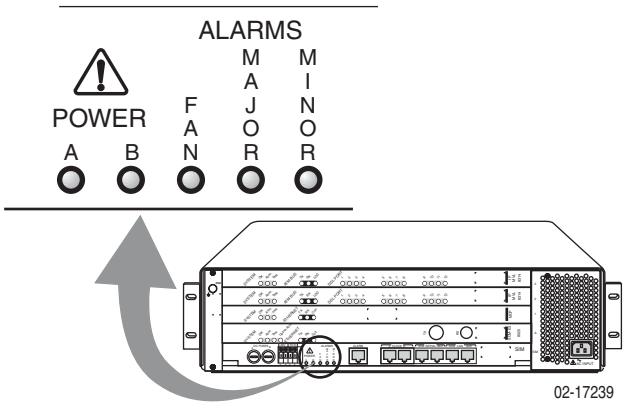
Symptom	Possible Cause	Solutions
Difficulty seating MCP, SCM or line card when installing	Other cards and filler plates in the chassis are not properly secured.	Check to see that the other cards and filler plates in the chassis are properly secured by the screws on the faceplate. If you still experience difficulty in seating the card, call service.
	Card may be slightly warped.	Manipulate the card until it mates with the connector.
Line card is not working properly	Bad line card.	Replace the line card.
	Problem with connections in this slot.	Remove the line card from the slot and reinstall the card into another slot.
	Traffic not flowing.	Check the troubleshooting information in the SCM or SCP user's guide, as appropriate..

Table 4-1. Troubleshooting Table (2 of 2)

Symptom	Possible Cause	Solutions
System Alarm LED is ON (on a line card)	SYSTEM ALM LED is ON and line card is inoperative in Slot *n*.	*For an SCP-card-based chassis:* 1. Using the Status - Alarms screen of the web interface, determine what alarms have been reported against the line card. 2. If a major alarm is indicated, check the Ethernet connections for the SCP and line card. 3. Remove and reinstall the card. 4. If unable to clear by reinstalling the card, replace the card. *For an MCP-based chassis:* 1. Choose Card Selection from the Main Menu to display the status of each line card. 2. If a major alarm is indicated, reset the MCP card (**A-A-F**). Then, reset the line card (**A-A-E**). 3. Remove and reinstall the card. 4. If unable to clear by resetting the card, replace the card.

LEDs

The following table describes the meaning and states of the LEDs on the front panel of the SIM card in the 8620 BAC. For individual card LEDs, see the appropriate card Installation Instructions.



LED	LED is . . .	Indicating . . .
PWR A	Green	Normal operation for Power Source A.
	Off	Low, high, or no voltage for Power Source A.
PWR B	Green	Normal operation for Power Source B.
	Off	Low, high, or no voltage for Power Source B.
FAN ALM	Yellow	Fans are working at less than 50% of normal output.
	Off	Normal operation or no power to mounting.
Major Alarm	Yellow	Major alarm present on any of the cards in the chassis. The card with alarm conditions will also have its Alarm LED lit.
	Off	No major alarms.
Minor Alarm	Yellow	Minor alarm present on any of the cards (or Power Alarm problem) in the chassis. The card with alarm conditions will also have its Alarm LED lit.
	Off	No minor alarms.

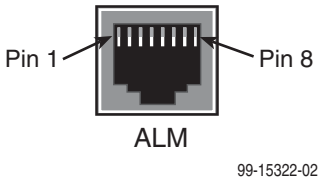
Pinouts

A

8-Pin Modular Connector for Alarm Relay Interface

The 8-pin interface for the Alarm Relay Interface (ALARM) connection has the following pin assignments.

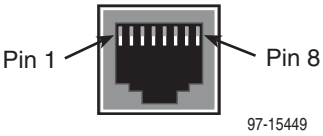
Pin Number	Use
1	Not used
2	Closed on major alarm
3	Common on major alarm
4	Open on major alarm
5	Closed on minor alarm
6	Common on minor alarm
7	Open on minor alarm
8	Not used



8-Pin Modular Connectors for Clock A and Clock B

When an SCP card is installed, the Clock A and Clock B connectors may be used for system clocking. They have the following pin assignments:

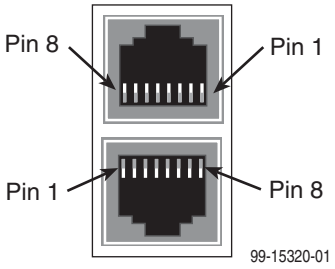
Pin Number	Use
1	Not used
2	Not used
3	Not used
4	Signal +
5	Signal –
6	Not used
7	Frame/Signal Ground
8	Not used



8-Pin Modular LAN MCP/LAN SCM Slot Connector

The 8-pin interface for the LAN 10/100 BaseT connections has the following pin assignments.

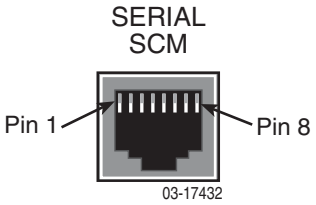
Pin Number	Use
1	TX Data +
2	TX Data –
3	RX Data +
4	Reserved
5	Reserved
6	RX Data –
7	Reserved
8	Reserved



8-Pin Modular Serial SCM Connector

The 8-pin SERIAL SCM connector (used for the SCP card's command line interface) is a DCE-type connection with the following pin assignments.

Pin Number	Use	Direction
1	Ring Indicator	Out
2	Receive Line Signal Detect	Out
3	Reserved	–
4	Signal Ground	–
5	Receive Data	Out
6	Transmit Data	In
7	Clear to Send	Out
8	Request to Send	In



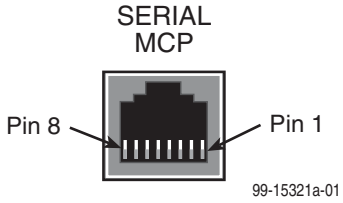
8-Pin Modular Serial MCP Connector

The 8-pin SERIAL MCP connector (used for the MCP's asynchronous terminal interface) is a DCE-type connection with the following pin assignments.

NOTE:

The serial port is active only on the base unit.

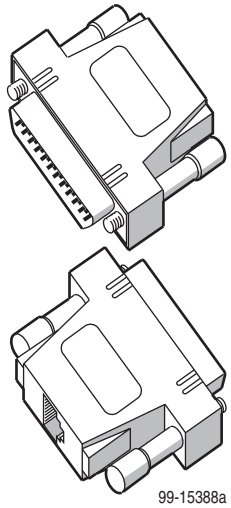
Pin Number	Function
1	Reserved
2	Reserved
3	Reserved
4	Signal Ground
5	Receive Data
6	Transmit Data
7	Reserved
8	Reserved



DB25 Adapter Pinouts

The DB25 (RS-232 male) cable adapter (Paradyne Part No. 002-0087-0031) is used to convert the 8-pin modular serial interface to a standard RS-232 DB25 interface, which can then be connected to a terminal, computer, or any Data Termination Equipment (DTE). Connection to a modem requires a null modem adapter. The following table lists the pin assignments.

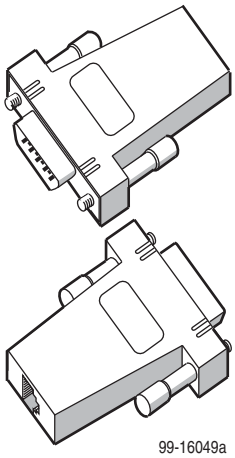
8-Pin Modular Serial Interface Pin Number	Use	DB25 Interface Pin Number
1 2	Pins 1 and 2 are shorted together	—
3	Data Terminal Ready	20
4	Signal Ground	7
5	Receive Data	3
6	Transmit Data	2
7	Clear to Send	5
8	Request to Send	4



DB9 Adapter Pinouts

The female DB9 cable adapter (Paradyne Part No. 002-0091-0031) is used to convert the 8-pin modular serial interface to a standard DB9 interface, which can then be connected to a laptop computer. The following table lists the pin assignments.

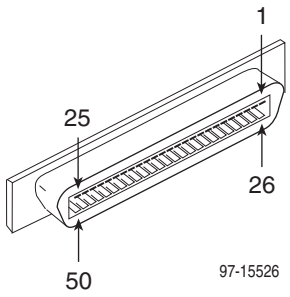
8-Pin Modular Serial Interface Pin Number	Use	DB9 Interface Pin Number
1 2	Pins 1 and 2 are shorted together	—
3	Data Terminal Ready	4
4	Signal Ground	5
5	Receive Data	2
6	Transmit Data	3
7	Clear to Send	8
8	Request to Send	7



Telco 50-Pin Connector Pinouts for DSL Loops and POTS Splitters

The three Telco 50-pin receptacles on the rear of the chassis (labeled for Slots 1, 2, 3) provide the 2-wire loop interface from each DSL port to either the POTS splitter card or, if the loop is not being shared with POTS, then to the Main Distribution Frame (MDF). The following table lists the pin assignments for each of these interfaces.

CONN # for Slots 1–3	**CONN PINS (Ring, Tip)**
Port 1	1, 26
Port 2	2, 27
Port 3	3, 28
Port 4	4, 29
Port 5	5, 30
Port 6	6, 31
Port 7	7, 32
Port 8	8, 33
Port 9	9, 34
Port 10	10, 35
Port 11	11, 36
Port 12	12, 37
Port 13	13, 38
Port 14	14, 39
Port 15	15, 40
Port 16	16, 41
Port 17	17, 42
Port 18	18, 43
Port 19	19, 44
Port 20	20, 45
Port 21	21, 46
Port 22	22, 47
Port 23	23, 48
Port 24	24, 49
Port 25	25, 50



Technical Specifications

B

Table B-1 lists the technical specifications for the 8620 BAC.

Table B-1. 8620 BAC Technical Specifications (1 of 2)

Specifications	Criteria*
Physical Dimensions	Height: 5.22 inches (13.26 cm) Width: 17.20 inches (43.69 cm) Depth: 12.0 inches (30.48 cm) Weight for AC Model: 18 pounds (8.16 kg) Weight for DC Model: 14.4 pounds (6.53 kg) A standard 7-foot EIA cabinet can hold a maximum of 14 chassis.
Interfaces	■ 48V power (two pairs of screw terminals for A and B inputs) ■ One 8-pin modular jack for 10/100 BaseT Network Access Provider interface for the MCP card ■ Three 50-pin Telco connector for DSL Loop interfaces ■ One 8-pin modular jack for a VT100 compatible terminal (serial) connection ■ One 8-pin modular jack for the Alarm Relay Interface connection
Power	The 8620 BAC is available in an AC-powered version and a DC-powered version. The AC version can be connected to a DC source to provide power redundancy. With the DC version, two separate DC sources may be employed to provide power redundancy. The AC version accepts AC power (100–240 V, nominal; 50–60 Hz) and converts it to DC power. The maximum current draw is 4 amps, or 250 watts at 120 VAC. The DC version operates from a DC 48 VDC power supply (48 V, nominal). The maximum current draw is less than 5 amps at 42 VDC. Both versions distribute 48 VDC power from the power source to individual cards via the backplane.
Grounding	A ground lug is located on the right rear of the 8620 BAC. It accepts 14 AWG wire. A noninsulated banana jack is located at the left front of the 8620 BAC providing a ground for the ESD wrist strap plug.

* Technical Specifications subject to change without notification.

Table B-1. 8620 BAC Technical Specifications (2 of 2)

Specifications	Criteria*
Cooling and Air Handling	The internal fans are installed in the chassis to provide cooling. A built-in feature shuts off power to the circuit cards if a chassis overheats because of fan failure. If the temperature in the chassis reaches 70°C, power to the cards in the chassis is turned off automatically. Power is turned on when the temperature drops below 60°C.
Operating Environment	Ambient Temperature for system: 32° to 122° F (0° to 50°C) Ambient Temperature for chassis only: 32° to 140° F (0° to 60°C) Relative Humidity: 15% to 99% noncondensing Shock and vibration sufficient to withstand normal shipping
External Clocking	With an SCP card installed, the following clock rates are supported over the Clock A and Clock B connectors: ■ 2048 KHz (E1) ■ 1544 KHz (T1) ■ 64/8 KHz (standard BITS) ■ 64/8/0.4 KHz (standard BITS plus 400 Hz)

* Technical Specifications subject to change without notification.

Index

A

alarm relay, A-1
ATM, 1-1
    ADSL card, 1-3
    SDSL card, 1-3

C

cable ties, 3-3
cabling, 2-2, 3-1
    alarm, 3-9
    computer, 3-5–3-6
    modem, 3-7
    SNMP, 3-6, 3-8
    tip and ring, 3-2
card
    ATM ADSL, 1-3
    ATM SDSL, 1-3
    installing, 2-15
    interoperability, 1-4
    line, 1-3
    MCP, 1-2
    SCM, 1-2
    SCP, 1-2
CO ground lug, 2-8
components, 1-5
configuration, example, 1-1
cooling and air handling, B-2

D

DLC (Digital Loop Carrier), 1-1
DSL cards, 1-3

F

features, 1-4

G

glossary, Paradyne master, iv
grounding, 2-1, B-1

I

installation
    card, 2-14
    verification, 2-16
interfaces, B-1
interoperability of line cards, 1-4
ISP (Internet Service Provider), 1-1

L

LEDs, 2-16, 4-3
line cards, 1-3
locking pivot bracket, 3-4

M

MCP, 1-2
    interoperability, 1-4
mounting configurations, 2-4
    attaching the mounting brackets, 2-6
    installing in a rack, 2-7
    rack mounting, 2-6

N

NAP (Network Access Provider), 1-1

O

operating environment, B-2

P

package contents, 2-3
    associated hardware, 2-3
physical dimensions, B-1
pinouts, A-1
    50-pin Telco connector for DSL loops and POTS splitters, A-5
    8-pin modular
        connector for alarm relay, A-1
        connector for LAN slot connector, A-2
        serial connector, A-2–A-3
    DB25 adapter, A-4
    DB9 adapter, A-4
port cards, 1-3
power, 1-4, 2-1, 2-9, B-1
    AC, 2-12
    AC with DC backup, 2-13
    DC, 2-10
    redundant DC, 2-11
preinstallation, 2-1

R

ReachDSL card, 1-3
related documents, iv
RT (Remote Terminal), 1-1

S

SCM, 1-2
    interoperability, 1-4
SCP card, 1-2
    interoperability, 1-4
site, 2-1
SNMP, 1-4
    cabling, 3-6, 3-8

T

technical specifications, B-1
troubleshooting, 4-1

U

unpacking, 2-3